

THE SWIFT FOLLOW-UP TEAM AND ITS INTERFACE WITH THE MISSION

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FOLLOW-UP TEAM

- Consists of 39 astronomers, mostly interested in GRBs (some are interested in X-ray binaries, survey sources, etc.)
- Carefully selected for
 - Good geographical coverage
 - Good mix of large telescopes and smaller robotic ones
 - Good wavelength coverage
 - Minimum duplication of effort and competition within team
 - Commitment to spend time working on Swift GRBs

PRINCIPLES OF OPERATION (SHORT SUMMARY)

- Follow-up astronomers must spend a significant amount of their time, usually $>20\%$, or of observatory time, observing Swift GRBs, SGRs, or survey sources
- Are responsible for obtaining their own observing time via proposals, or guaranteed time, but are free to identify themselves as part of the Swift team to do so
- Agree to keep Swift project (BA or other people) informed of their plans and results, to help us run the mission
- Agree to collaborate with Swift co-I's in data analysis and publication, as appropriate
- Do not receive funding from the Swift project, but are free to submit GI proposals, identifying themselves as part of the Swift team

SWIFT PROJECT'S OBLIGATIONS TO FOLLOW-UP TEAM MEMBERS

- Perform supplementary analyses of Swift data as required to enhance follow-up observations (examples might be rapid data analysis or assistance for publications)
- Consult with follow-up team members in planning GRB observations, in order to maximize scientific output and minimize redundancy
- Minimize competition between follow-up team members for time at any particular observatory, by carefully selecting and limiting team members

<u>NAME</u>	<u>INSTITUTE</u>	<u>INSTRUMENT/OBSERVATORY</u>
1. Carl Akerlof	U. Michigan	ROTSE III
2. Charles Alcock	SAO	TAOS
3. Angelo Antonelli	Rome Observatory	ESO, REM, FAME, OAR
4. Michel Boer	CESR	TAROT
5. David Buckley	SAAO	9 m SALT telescope
6. Ron Canterna	WIRO	Red Buttes Obs. 0.6 m IR telescope
7. Andrea Cimatti	Arcetri	LBT
8. Malcolm Coe	Southampton	Tenerife IRTF, SAAO
9. Stefano Covino	Brera	ESO, REM
10. Thierry Courvoisier	ISDC	INTEGRAL
11. Massimo Della Valle	Arcetri	VLT, LBT, Galileo
12. Brenda Dingus	LANL	Milagro
13. Alex Filippenko	UC Berkeley	KAIT, Keck
14. Sam Finn	PSU	LIGO
15. Fabrizio Fiore	Rome Observatory	VLT
16. Andy Fruchter	STScI	HST
17. Gabriele Ghisellini	Brera Observatory	VLT, LBT, Galileo
18. Roberto Gilmozzi	VLT	VLT
19. Dieter Hartmann	Clemson	SARA
20. Nobu Kawai	RIKEN	Okayama Obs. 50 cm robotic & 91 cm IR telescopes
21. Shri Kulkarni	Caltech	Keck, Palomar
22. Matt Lehner	U. Pennsylvania	TAOS
23. Bruce Margon	STScI	ARC, Apache Point

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<u>NAME</u>	<u>INSTITUTE</u>	<u>INSTRUMENT/OBSERVATORY</u>
24. Felix Mirabel	CEA-Saclay	VLT, SIRTf
25. Carol Mundell	John Moores U.	La Palma 2 m robotic telescope
26. Paul O'Brien	Leicester U.	Faulkes, Liverpool telescopes
27. Hye-Sook Park	LLNL	LOTIS, Super-LOTIS
28. Holger Pedersen	Copenhagen U. Obs.	NOT La Palma, ESO
29. James Rhoads	STScI	KPNO, CTIO, NASA IRTF
30. Brad Schaefer	UT Austin	McDonald, HET
31. Don Schneider	PSU	HET
32. Mark Skinner	Air Force	AEOS
33. Ian Smith	Rice University	AEOS, Misc. IR, sub-mm
34. Chris Stubbs	U. Washington	ARC, Apache Point
35. Nial Tanvir	U. Herfordshire	UKIRT, WHT
36. Fred Vrba	USNO	1 m, 1.3 m telescopes
37. Nic Walton	Cambridge	Isaac Newton Telescopes
38. Peter Wheatley	Leicester	WASP, Faulkes
39. Filippo Zerbi	Brera	REM.

ACRONYMS, WEBSITES

AEOS: Advanced Electro-Optical System, www.fas.org/spp/military/program/track/aeos.htm
ARC: Astrophysics Research Consortium, astro.uchicago.edu/uc-apo/
CTIO: Cerro Tololo Inter-American Observatory, www.ctio.noao.edu/
FAME: Fast Alert Machine, grb.mporzio.astro.it
Faulkes: The Faulkes Telescope Project in Hawaii & Australia, www.faulkes-telescope.com/
Galileo: Telescopio Nazionale Galileo, www.tng.iac.es
HET: Hobby-Eberly Telescope, www.as.utexas.edu/mcdonald/het/het.html
IRTF: Infrared Telescope Facility, www.iac.es/telescopes/ten.html
KAIT: Katzman Automated Imaging Telescope, astron.berkeley.edu/~bait/kait_lwd.html
LBT: Large Binocular Telescope, medusa.as.arizona.edu/lbto/
LIGO: Laser Interferometer Gravitational Wave Observatory, www.ligo.caltech.edu
Liverpool: The Liverpool Telescope at La Palma, telescope.livjm.ac.uk/
NASA IRTF: Infrared Telescope Facility, irtfweb.ifa.hawaii.edu
NOT: Nordic Optical Telescope, www.not.iac.es
OAR: Astronomical Observatory of Rome, grb.mporzio.astro.it
REM: Rapid Eye Mount, golem.merate.mi.astro.it/projects/rem/
ROTSE: Robotic Optical Transient Search Experiment, www.rotse.net

SAAO: South African Astronomical Observatory, www.saa.ac.za

SARA: Southeastern Association for Research in Astronomy,
www.astro.clemson.edu/sara.html

SALT: South African Large Telescope, www.salt.ac.za/default.htm

Super-LOTIS: Livermore Optical Transient Imaging System,
slotis.kpno.noao.edu/~ggwilli/LOTIS/index.shtml

TAOS: Taiwanese-American Occultation Survey

TAROT: Rapid Action Telescope for Transient Objects, www.cesr.fr/~boer/tarot/

UKIRT: United Kingdom Infrared Telescope,
www.jach.hawaii.edu/JACpublic/UKIRT/home.html

VLT: Very Large Telescope, www.eso.org WASP: The UK Wide-field Automated Survey
Programme, www.star.le.ac.uk/~pjw/wasp/wasp_escience.html

WHT: William Herschel Telescope, www.ing.iac.es/Astronomy/telescopes/wht

FOUR TYPES OF FACILITIES

- Automated telescopes; slew automatically within seconds to a GRB position whenever possible (no interaction with BA needed)
- Non-steerable facilities, like Milagro and LIGO; observe a large fraction of the sky more or less continuously (no interaction with BA needed)
- Space-based telescopes (INTEGRAL, XMM, HST); in principle, they can respond to Swift GRBs on a ToO basis, but this may take a day or more (some BA interaction possible)
- Large, steerable, ground-based telescopes (maximum interaction with BA)

MAIN INTERACTIONS BETWEEN THE BA AND THE FOLLOW-UP TEAM

1. BA needs to know when to give up control of a burst, to allow a new burst to be observed; in some cases this decision will depend on the quantity and quality of follow-up observations being conducted
2. Follow-up astronomer may need to request a particular type or duration of observation by Swift to complement his or her observations